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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,337	11/26/2003	Hidehiko Hori	2257-0239P	8371
2292	7590	11/04/2004	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			BLACKMAN, ROCHELLE ANN J	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/721,337

Applicant(s)

HORI, HIDEHIKO

Examiner

Rochelle Blackman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

Claim 23 is objected to because of the following informalities: the word - - surface- - should be between "outgoing" and "shape". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, 9-12, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Shikama et al. (U.S. Patent No. 5,634,704).

Regarding claims 1 and 9, Shikama discloses an optical system (FIG. 5) configured to guide light emitted from a lamp source (21) to an image display region (see 70 of FIG. 6C) of a reflection type display device (61) along a predetermined optical path, to use said image display region of said reflection type display device to modulate and reflect a light component, and to project the modulated and reflected light component onto a predetermined screen (SC), wherein a light guiding member (30 of FIGS. 5 and 6D) for reflecting therein light entering through a light entering surface (see area of "light guiding member" 30 near element S1 in FIG. 5) several times to cause

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light having a uniform illumination distribution to outgo from a light outgoing surface (see 30B of FIG. 5) is inserted into an optical path between said lamp source and said reflection type display device, and said light outgoing surface of said light guiding member is formed in a dissimilar shape ("light outgoing surface" of "light guiding member" 30 in FIG. 6D has an aspect ratio of 16:9 – see col. 11, lines 11-18) with said image display region ("image display region" 70 in FIG. 6C has an aspect ratio of 4:3 – see col. 11, lines 11-18) of said reflection type display device, and a region (74) irradiated with light in said image display region is smaller than said image display region; wherein the dissimilar shape of said light outgoing surface comprises an aspect ratio which is different from the aspect ratio of said image display region (previously stated above - see col. 11, lines 11-18).

Regarding claims 5 and 10, Shikama discloses a projection type image display apparatus (FIG. 5) configured to guide light emitted from a lamp source (21) to an image display region (see 70 of FIG. 6C) of a reflection type display device (61) along a predetermined optical path, to use said image display region of said reflection type display device to modulate and reflect a light component, and to project the modulated and reflected light component onto a predetermined screen (SC), wherein a light guiding member (30 of FIGS. 5 and 6D) for reflecting therein light entering through a light entering surface (see are of "light guiding member" 30 near element S1 in FIG. 5) several times to cause light having a uniform illumination distribution to outgo from a light outgoing surface (see 30B of FIG. 5) is inserted into an optical path between said lamp source and said reflection type display device, and said light outgoing surface of

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said light guiding member is formed in a dissimilar shape ("light outgoing surface" of "light guiding member" 30 in FIG. 6D has an aspect ratio of 16:9 – see col. 11, lines 11-18) with said image display region ("image display region" 70 in FIG. 6C has an aspect ratio of 4:3 – see col. 11, lines 11-18) of said reflection type display device, and a region (74) irradiated with light in said image display region is smaller than said image display region; wherein the dissimilar shape of said light outgoing surface comprises an aspect ratio which is different from the aspect ratio of said image display region (previously stated above - see col. 11, lines 11-18).

Regarding claims 11, 12, and 21-23, Shikama discloses an optical system (FIG. 5) comprising: a light guiding member (30 of FIGS. 5 and 6D) including an internal reflective surface (see 30) and a light outgoing surface (see 30B of FIG. 5), the light guiding member being configured to receive light and use the internal reflective surface to repeatedly reflect the light, thereby causing the light to have a substantially uniform illumination distribution as the light is discharged from the light outgoing surface, at least part of the discharged light being transmitted along an optical path; and a reflection type display device (61) positioned along the optical path, the reflection type display device including an image display region (70 of FIG. 6C) configured to modulate and reflect the at least part of the discharged light, thereby projecting modulated light onto a screen (SC), wherein the at least part of the discharged light, which is transmitted to the reflection type display device via the optical path, is irradiated on only a portion (74 of FIG. 6C) of the image display region; wherein the light outgoing surface has a different shape ("light outgoing surface" of "light guiding member" 30 in FIG. 6D has an aspect

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ratio of 16:9 – see col. 11, lines 11-18) than the image display region (“image display region” 70 in FIG. 6C has an aspect ratio of 4:3 – see col. 11, lines 11-18), thereby causing the discharged light, which is transmitted to the reflection type display device, to be irradiated on only a portion (74) of the image display region; wherein said light guiding member is configured as a rectangular tube, each side of the rectangular tube having a reflective inner surface facing a hollow of the rectangular tube (see 30); wherein said light guiding member is configured as a rod lens (see 30); wherein the light outgoing shape of the light guiding member has a different aspect ratio than the image display region (previously stated above - see col. 11, lines 11-18).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2-4, 6-8, 13, 14, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikama et al. (U.S. Patent No. 5,634,704) in view of Takahashi (U.S. Patent No. 6,657,725).

Shikama discloses the claimed invention except for an optical system and/or projection type image display apparatus comprising a light shielding member for shielding light passing outside said reflection surface; wherein said light shielding member is a light shielding plate provided independently of said light guiding member;

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and wherein said light shielding member is provided on an end face of said rectangular tube member; a light shielding member configured to shield light from the light source, which does not enter the light guiding member through the light entering surface; wherein the light shielding member is positioned along the optical path between the light outgoing surface display device and the reflection type display device; wherein the light shielding member is a light shielding plate having a center opening with substantially the same shape and optical axis as the light outgoing surface; wherein the light shielding member is independently adjustable in relation to the light guiding member.

Takahashi discloses a scanning projection exposure apparatus including a masking blade 7 formed by four shielding plates which move independently of one another, and slit 6, provided in the optical axis, independent of beam shaping optical system 2 and optical integrator 3 and at exit areas thereof, that can change an illumination area width in the scanning direction, excluding a portion of this area (see FIG. 1 and abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a masking blade and slit in the optical axis, independent of, and at an exit area of the "light guiding member" of the Shikama reference, as taught by Takahashi in order to change the illumination area width of the "image display region", excluding a portion of the "image display region" in the Shikama reference.

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2. Claims 2-4, 6-8, 13-16, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shikama et al. (U.S. Patent No. 5,634,704) in view of Kato (U.S. Patent No. 6,698,891)

Shikama discloses the claimed invention except for an optical system and/or projection type image display apparatus comprising a light shielding member for shielding light passing outside said reflection surface; wherein said light shielding member is a light shielding plate provided independently of said light guiding member; wherein said light shielding member is provided on an end face of said rectangular tube member; a light shielding member configured to shield light from the light source, which does not enter the light guiding member through the light entering surface; wherein the light shielding member is positioned along the optical path between the light outgoing surface display device and the reflection type display device; wherein the light shielding member is positioned between the lamp source and the light entering surface; wherein the light shielding member is a light shielding plate having a center opening with substantially the same shape and optical axis as the light outgoing surface; wherein the light shielding member is a light shielding substance applied to an end face of the light guiding member; wherein the light shielding substance applied to an end face of the light guiding member facing the optical path, the light shielding substance being applied to an outer region of the end face, and the light outgoing surface comprises a region of the end face not shielded by the light shielding substance; wherein the light shielding substance is applied to an end face of the light guiding member facing the light source.



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Kato teaches providing a light shielding member (23) for shielding light passing outside said reflection surface; wherein said light shielding member is a light shielding plate provided independently of said light guiding member (see 22); wherein said light shielding member is provided on an end face (SO) of said rectangular tube member; a light shielding member (23) configured to shield light from the light source, which does not enter the light guiding member through the light entering surface; wherein the light shielding member is positioned along the optical path between the light outgoing surface display device and the reflection type display device; wherein the light shielding member (8, 19) is positioned between the lamp source (2) and the light entering surface (SI); wherein the light shielding member is a light shielding plate (see 23) having a center opening with substantially the same shape and optical axis as the light outgoing surface; wherein the light shielding member is a light shielding substance (antireflection film – see col. 9, lines 25-28) applied to an end face (SO) of the light guiding member; wherein the light shielding substance applied to an end face (SO) of the light guiding member facing the optical path, the light shielding substance being applied to an outer region (SO) of the end face, and the light outgoing surface comprises a region (area coinciding with element 23a) of the end face not shielded by the light shielding substance; wherein the light shielding substance is applied to an end face (SI) of the light guiding member facing the light source, and the light entering surface comprises a region (area coincided with element 8a or 19a) of the end face not shielded by the light shielding substance.

It would have been obvious to one ordinary skill in the art at time the invention was made to provide "optical system and/or projection type image display apparatus" of the Shikama reference with a "light shielding member" as taught by Kato, in order to provide a polarizing unit which is capable of making compact an optical system made up of a columnar integrated device and a polarized light converting optical system and of reducing a diverging angle of light being incident on a comparatively smaller crystal panel (see col. 2, lines 44-50).

### ***Response to Arguments***

Applicant's arguments filed August 10, 2004 have been fully considered but they are not persuasive.

1. Applicant argues Shikama does not disclose that the "image display region of the reflection type display device" is being "used to modulate and reflect a light component, which is projected onto a screen". Examiner disagrees and maintains Shikama clearly discloses that the "image display region"(70 of FIG. 6C) of the "reflective type display device"(61 of FIG. 6C) is being "used to reflect and modulate a light component"(see 74 in FIG. 6C and col. 11, lines 11-18).

2. In response to applicant's argument that Takahashi (U.S. Patent No. 6,657,725) is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443

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(Fed. Cir. 1992). In this case, relevant art is optics, which is fully disclosed in Takahashi.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lin et al. (U.S. Patent No. 5,748,376) discloses a liquid-crystal projection display system comprising a double-layer square-pillar-light integrator, including an inner layer and an outer layer.

Funanami et al. (U.S. Patent No. 5,800,033) discloses rod integrator 402 having an incident side end face conjugate with the position of light shielding 404, where changing the size of the opening the light shielding frame is controlling a solid angle of a luminous flux which has been emitted from the illuminating lens system 403 and is irradiated on the reflecting type optical writing liquid crystal light valves 421, 431 and 441.

Bierhuizen et al. (U.S. Patent No. 6,578,968) discloses second integrating rod 64 provided with a reflective means, for example a reflective coating 66 for reflecting the reflected light beam back to the display system.

Fischer et al. (U.S. Patent Application Publication No. 2002/011834) discloses masks 7 of differing shapes and sizes located at the output face or surface 4b of the light pipe 4 so as to define, as desired, the shape of the pattern of light at the object 6 and thus a mask 7 could have the shape of a circle, an ellipse, a star, or any other

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desired shape. As such, the pattern of light can be modified, i.e., made larger, smaller, or have its shape changed, without effecting its uniform properties.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB

  
JUDY NGUYEN  
PRIMARY EXAMINER